

Energy and Climate Change Committee

Home energy efficiency and demand reduction inquiry

Written submission on behalf of the National Energy Foundation

1 Executive summary

- Lack of clear long-term strategy and performance measurement
- Mixed messaging and promotion of schemes
- Delivery at scale remains a challenge
- Piecemeal, ad-hoc roll-out
- Short-termism, fragmentation, complexity
- Institutional memory and knowledge capture
- Levelling organisational input
- Impartial and independent advice
- Consumer time horizons and dislike of loans
- The Energiesprong experience in the Netherlands

2 The National Energy Foundation

The National Energy Foundation is an independent, national charity, and has been at the forefront of improving the use of energy in buildings since 1988. We aim to give people, organisations and government the knowledge, support and inspiration they need to understand and improve the use of energy in buildings.

We do this through:

- Delivering practical projects – using our experience and technical expertise.
- Inspiring action – providing building owners and occupiers with the encouragement, advice and real-life examples to achieve better performing buildings.
- Advancing knowledge - supporting collaboration to drive forward the frontiers of knowledge, innovation and practice.
- Identifying and addressing market failures using evidence, analysis and ideas.

3 The Foundation's work

Over the last 25 years, the Foundation has worked with installers and residents of all types of dwellings, ranging from new-build to historic properties, and with all forms of tenure.

Most recently, we have worked on:

- The Green Deal Communities project with several local authorities.
- Affordable Warmth networks.
- Bicester Green Deal.

- Retrofit for the Future programme.
- Green Deal Providers Group.
- Building Performance Evaluation programme.

The Foundation also:

- Operates the online [YouGen advice service](#) on renewable energy.
- Operates the [SuperHomes network](#) of 200 eco-friendly refurbished homes.
- Provides secretariat support for [Energiesprong UK](#).

Why have previous approaches to energy efficiency failed to deliver significant results?

4 Lack of clear long-term strategy and performance measurement

Many previous policies and incentives aimed at increasing the uptake of domestic energy efficiency measures have failed to drive considerable demand and large volumes of uptake. More specifically, we at the National Energy Foundation are concerned about whether there is clarity about which measures have been deployed, whether they are performing as intended and if they are delivering the envisaged energy and carbon dioxide emission savings.

Much of the focus of previous policies has been on achieving a certain number of outputs (eg: installations). However, results cannot be inferred merely from the number of measures deployed. Further work on performance verification, quality assurance and data analysis is needed. This would lead to an improved understanding of what works, what doesn't work and why, and what supply chain innovation, skills and training are needed to address matters. Existing good work in this area includes:

- The DECC NEED database.
- Longitudinal studies being undertaken by academic institutions.
- Ad-hoc in-field testing and expert witness work being undertaken by the National Energy Foundation and others.

Focus needs to be shifted to outcomes, highlighting the achieved energy savings or carbon reductions. DECC often evaluates projects on a short timescale - during the project/policy lifetime – and rarely allowing installed measures to be in place for a complete heating season before undertaking market research. This precludes any longitudinal studies or qualitative analysis. The focus of evaluation is on customer service issues such as whether the installation was done cleanly and courteously - with inadequate analysis of before and after energy use, or the financial savings achieved. This makes it very difficult to assess the success of certain programmes and to make improvements to initiatives. Field trials that have been commissioned have been very telling – heat pumps, domestic solar hot water, cavity wall, solid wall – yet the findings rarely seem to be used to inform future large-scale policy initiatives.

This targeting of outputs rather than outcomes produces mixed messaging. For example, ECO, which targets the fuel poor, might only achieve outcomes in certain circumstances. Many of those in fuel poverty will certainly benefit from increased energy efficiency: for example, they might become more comfortable and suffer less from the associated effects of living in cold and damp homes. However, given that they probably already under-heat their homes, it's unlikely that they will achieve either any energy or carbon savings.

Alongside the mixed messaging and targeting is the issue of how schemes are promoted. Green Deal marketing focussed on promoting the Green Deal brand. Whilst this might have raised awareness of the policy, and made it easier for installers to have a brand on which to focus their marketing, it did not raise awareness of energy efficiency *per se*. This inevitably meant that the messaging and

communications had to change whenever the policy changed, rather than there being an enduring message about the benefits of saving energy or reducing carbon emissions themselves, over the lifetime of the scheme.

5 Delivery at scale remains a challenge

There is mounting evidence that there's a considerable lack of understanding about how best to deploy retrofit in large volumes. Cities such as Birmingham, Manchester and Liverpool have all heavily bought into the economic, social and environmental promises that successful roll-out of retrofit offers. Each has invested significant sums in promoting and driving schemes in their regions, only to make very little head-way. Reasons for this are extremely complex but include the challenges of:

- Diversity of building tenures.
- Encouraging take-up across demographics, cultures, faiths, circumstances.
- Volatility of Government policy and subsidy initiatives – for example:

<http://www.birminghampost.co.uk/news/regional-affairs/city-council-green-scheme-birmingham-10060185>)

In essence, the region-wide promotion and delivery of retrofit hasn't worked, partly due to local authorities not having the resources to drive the agenda successfully. The National Energy Foundation strongly encourages a far more constructive, phased approach whereby the social housing sector takes on the role of a catalyst and drives domestic retrofit. Social housing providers have the experience of delivering the 'Decent Homes' programme and already have staff undertaking the maintenance and management of homes. Though biased towards a single tenure, this approach would:

- Enable the supply chain to be developed gradually.
- Drive efficiencies and product innovations to a point where the solution becomes more acceptable to private landlords and owner occupiers.

6 Piecemeal, ad-hoc roll-out

This is largely driven by the over-simplified approach taken to household assessment and the resulting Energy Performance Certificate (EPC). EPCs recommend individual measure upgrades and do very little to explain the differences between installing one or two measures independently, compared to installing multiple measures as a package. Failure to deliver the most effective results means that householders who insulate their cavity walls (for example) often consider their homes fully upgraded and aren't inspired to go any further.

This can have a huge bearing on the eventual outcome as it has been shown that success is best achieved through a whole-house approach - often including: floor, wall and loft insulation, upgraded windows, an appropriately sized new heating system, and a properly specified ventilation system. Unplanned, piecemeal, measure-by-measure approaches can result in 'locking in' to a partly improved home, thereby effectively preventing further improvement.

The National Energy Foundation and its partners believe that the best approach is for whole-house assessments that result in long-term, whole-house improvement plans. These might include a need for an investment of £10,000 - £20,000 in order to deliver an 80%+ reduction in energy consumption, but the plans should clearly signal how this could be best spread over time, and should integrate recommendations with other home improvements such as new kitchens, bathrooms, windows and doors, etc. Both householders and the supply chain could readily engage with these plans, deploying measures at whatever pace suits their situation whilst remaining focussed on the interplay between certain interventions and the ultimate need for the home to perform at the prescribed level.

However, EPCs - although based on standard occupancy and far from perfect - are increasingly recognised by consumers, offering basic support and stimulus to act. We believe that future schemes should encourage their uptake and take advantage of this consumer familiarity.

What lessons can be learnt from current and previous schemes including Green Deal, Green Deal Home Improvement Fund, and ECO?

7 Short termism, fragmentation, complexity

Our view is that a failure to instil confidence though medium to long-term certainty is the single biggest failing of all Government-backed domestic energy efficiency initiatives to date. As a sector with huge promise but limited consumer awareness and buy-in, Government intervention has been needed but it has not always been handled well, as shown by this example:

<http://www.cambridgeshirechamber.co.uk/newsevent.php?newseventid=3898>

8 Institutional memory and knowledge capture

DECC sometimes recruits very able graduates or seconds staff from other Government departments. Whilst this brings high-level expertise to the table, staff movements often lead to failure of institutional memory. For example, when the Green Deal was first formulated in the Policy Development Team, staff quickly got up to speed with the minutiae of how the scheme should work. However, many of those staff soon returned to their previous departments and the Green Deal moved into the Supply Team. Industry players then needed to up-skill new DECC staff and had to go over old ground unnecessarily. This has not only been a symptom of the Green Deal. Another project we have recently worked on has had four different project managers within a 12-month period.

Some industry players have suggested the Energy Efficiency Partnership for Homes/Buildings as a potential model to follow. This partnership provided a space for industry and government (not just DECC) to maintain a dialogue and a body of knowledge which survived not only changes in staff, but also changes in Government.

9 Levelling organisational input

DECC is sometimes criticised for listening too much to the larger industry players (eg the utility companies) and not so much to those delivering on the ground. The larger organisations tend to have large marketing resources and lobbying budgets, and use these to good effect when responding to consultation, feeding into calls for evidence, sitting on steering groups, etc. Most SMEs and NGOs do not have the resources to contribute on anything like the same level, but might have significant contributions to make, based on their relevant experience and a less biased perspective. Future policy development could include interested organisations from outside government, who could be remunerated, in order to provide a fairer cross-section of opinion and experience.

10 Impartial and independent advice

Impartial advice is crucial to the success of any energy efficiency policy. Increasingly, consumers are faced with a plethora of sources of information, including public and private, and online via social media, for example. It's hard for impartial advice to stand out in this crowded market, and even harder for consumers to be able to spot truly independent advice from that given by vested interests.

Many consumers do not trust information provided by those whose profitability will depend on a successful number of installs, and feel it can't be independent. Trust in large corporations (including the utilities) is low. Private [research](#) carried out on our behalf in Autumn 2014 revealed that, while over half of UK consumers feel well-informed about energy, only 22% rely on energy suppliers for information, and a series of factual questions showed that actual understanding of energy use in the home was woefully poor.

We believe that recent 'advice' from Government that has relied mainly on pointing people towards (paid-for) Green Deal assessments has added to the problem, especially with the ending of funding for

the Energy Saving Trust ESTAC network – we were involved closely with its lower cost predecessor, the network of Energy Efficiency Advice Centres.

Projects and organisations which raise aspirations and provide independent, unbiased, expert advice, should be supported. Although charities such as ourselves have a role to play, and we run a number of well-received initiatives in this area, we lack the resources and reach to provide the comprehensive and balanced advice that householders still need, often not realising they need it and rarely either willing or able to pay for it up-front.

Our [SuperHomes](#) project aims to inspire householders to achieve a minimum 60% carbon saving, while [YouGen](#) provides advice and support to consumers to install energy efficiency and renewable energy measures. YouGen also provides a recommended installer list, which is an important resource in assisting homeowners and tenants who want to take the next steps.

These projects inspire, educate and advise, but often it's only once a consumer has made the decision to make energy efficient improvements that they access such resources. Many previous Government policies have looked to 'sell' people things they don't necessarily want, or perhaps don't want at the time they're being offered. This leaves consumers at the mercy of specific subsidies, tariffs or grants, skews markets and leads to improvements being made at inappropriate junctures. ClearSkies, LCBP, FiTs, GDHIF etc could all fall into this category.

Energy efficiency policies that have worked well have helped consumers to be more energy efficient as a result of making a purchase they already want to make. The boiler scrappage scheme is a case in point - the subsidy was used to encourage the uptake of more energy efficient products. Lightbulbs, doors, windows etc. are all products that consumers need to purchase at some point and schemes designed around them - whether by carrot or stick - have reaped positive rewards by encouraging the public to move towards more energy efficient models.

Tightening legislation and regulation, particularly when widely publicised in advance, can also have a similar effect. The forthcoming MEEPS regulations (which will make it impossible to rent a property with an F or G-rating) are a good example of this. The regulations have been well-publicised and will be initially introduced as a voluntary recommendation, with enforcement coming some time later. This long-term approach enables both industry and the private rental sector to plan for the changes.

11 Consumer time horizons and dislike of loans

Most consumers have relatively short-term time horizons. The average UK homeowner moves more frequently than in many international markets, and the complexity of transferring debt on Green Deal financing was undoubtedly one of the many contributory factors in its low take-up. However, looking at a simple average period of ownership ignores the fact that there are long-term homeowners who choose to stay in their homes for many years and improve or extend them, rather than move on. Why, then, was the Green Deal unattractive to them? Largely anecdotally, we found that consumers are unwilling to take on long-term loans that would appear on their credit record, based on uncertain estimates of future energy savings.

Moreover, if they had access to cash in a bank or building society, the loan rates charged by the GDFC were unattractive, and yet foregoing even low rates of interest, income on bank deposits appears unattractive compared to estimates of future energy bill savings. In either case, a grant or subsidy would have been more attractive to consumers.

Consumers left at the mercy of changing subsidies, tariffs and grants (or even loans) find it difficult to make the right decision at the time that suits them as they more often act in a timescale which is not of their choosing. Particularly where major renovations, such as solid wall insulation, are concerned, most householders would prefer to shop around, get multiple quotes, and ask family and friends for recommendations. They will then begin to investigate funding options. Sadly, consumers have become

somewhat dependent on incentives and are now happy to wait and see what might come next. Indeed, whilst reductions in tariffs for generation technologies have the effect of stimulating action sooner, changes in subsidies for insulation can have an adverse effect – for example, those people who remember the CERT and CESP schemes might decide to wait for the next free scheme.

How does the UK's performance on home energy efficiency compare with other countries? What lessons can be learned from these countries on energy efficiency?

12 The Energiesprong experience in the Netherlands

In 2010, the Dutch government realised that its approach to residential retrofit all too often resulted in either shiny 'pilot schemes' (which couldn't be replicated because of their excessive cost and dependency on significant public grants), or piecemeal, single-measure approaches (which compromised on quality and efficiency). They took a strategic - but also a very brave and forward-thinking-decision - to invest in an innovative platform to address barriers in uptake in the market. This system became Energiesprong, which was originally applied in the social housing sector.

The move was away from one-off projects towards mass-produced refurbishment whole-house solutions. Energiesprong creates a desirable, energy-efficient and financially reassuring product for occupiers and drives innovation in the construction sector to make net-zero-energy housing refurbishments affordable and deliverable at an industrial scale.

In the Netherlands, several manufacturers now offer Energiesprong solutions. All use customised, off-site manufacturing processes to construct walls and roofs, which are pre-fitted with windows, doors, high levels of insulation and renewable energy measures. This improved building envelope also comes with a services pod housing the technical aspects of providing heat and power. The whole package is delivered to the site where each new section is precision fitted to the existing house with the minimum of on-site finishing. Each refurbishment is completed within 10 days with no need for the occupants to move out and the refurbishment cost is covered in the long term by the guaranteed energy savings.

The Dutch market has been transformed. So far, Energiesprong has delivered over 800 pilot scale refurbishments and has begun delivery against an agreement between housing associations and builders to refurbish 111,000 houses to net-zero-energy levels. Furthermore, there's scope for expansion to other housing types, private sector properties and even new-builds.

We already know that there's plenty of market potential for Energiesprong in the UK. The English Housing Survey 2013 states that there are 9.2 million houses built between 1945 and 1980, and having an average EPC at low band D. Properties in this category are those most likely to benefit from Energiesprong solutions.

Following a study tour to see Energiesprong in practice in the Netherlands, a forward-thinking group of registered providers, construction companies and building performance professionals set up Energiesprong UK to explore whether this approach could be applicable in a UK context. REMI, a feasibility project supported by Innovate UK, is currently undertaking a feasibility study.